

December 1999

Volume 10, Number 4

THE LAST SEATTLE STEAMER.....OF THE MILLENIUM by Vacant

A number of you took their time to send appreciation messages for the Steamer. Both the staff and I are thankful. I wanted to let you know how good it feels to receive something once in a while which is not a complaint. On the other hand we would also like to know if there is anything that needs improvement or should be handled differently. Let's have a deal, if you have an "attaboy" send it to my boss, if you have complaints send them to me.

I was looking at the history of the *Steamer* and its predecessor *The Boiler Newsletter*, and I happened to find the only copy of Volume 1, Number 1, dated January 1990. Since by the time this issue reaches you we will be celebrating the tenth anniversary, I have inserted the original *Steamer* in this issue.

You will notice that certain things are still current, and some things have changed. Among original Seattle Steamer those that have not changed is the mission of the Steamer. In the third paragraph, Don Gentry stated that "...the intent of the Steamer is to provide information to those who are interested in the installation, operation, care, repair and The Clock as a Safety De

maintenance of boilers, pressure vessels and related issues."

Among the things that have changed is the staff. James McClinton and Gloria Martin are still here (although Gloria threatens to leave once in a while, and James keeps saying that one of these days he'll quit the city and go out to make some real money), and yours truly is *Vacant*, the third inspector on the list. But other than that, we have a new crew.

Steam and refrigeration licensing is no longer the responsibility of the Department of Licenses and Consumer Affairs. We have moved twice since that first issue, and in a couple of years we will move again. But to me the biggest change is the mailing list. We went from a readership of roughly eighty names to almost 900, a ten fold increase!

I will not detail all the changes, and there is risk in this. Read carefully and try to separate this issue from the first one, otherwise some of you will end up at the King's Table Restaurant for the next WSBIA meeting. Don't. The King's Table is now a Block-

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Also in this issue a special centerfold, a reproduction of the original Seattle Steamer

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buster store, or at least it was last time I was in the area.

But I will conclude highlighting one last change. Don Gentry has moved to take care of bigger and better things, but his presence is still very much part of the operation. And if you want to thank somebody for the *Steamer*, don't thank me. I was just lucky to inherit a classy operation.

It is toward the end of the year that one becomes introspective, and this year even more so. Perhaps because we are at a juncture where saying *next month* has a totally different ring than saying *in the year 2000*. We just congratulated ourselves for having published the *Steamer* for 10 years, but to put this into perspective, just remember than less than 10 years ago the internet was just a trick known only to the most sophisticated computer nerds, while

(Continued on page 4)

GAS PIPING A NEW LICENSE? BY GIOVANNI

DCLU, in conjunction with the Seattle and King County Department of Public Health, has proposed to the City of Seattle Council the adoption of a system to license installers of gas piping.

The Seattle Mechanical Code, Chapter 13, contains regulations for the installation of gas piping. However, these regulations are not enforced by DCLU but by the Plumbers.

Since DCLU is already managing the licensing programs for steam operators and refrigeration operators and installers, it was decided to attach the newly proposed license to those existing.

The needs for this new license stem once more from safety. As utilization of gas appliances has become more popular, extending from the traditional commercial and single residence locations to apartment complexes, new materials and new ways of joining them have entered the field, and the codes.

The field inspectors of the Health Depart-

ment have been confronted recently with an increasing number of installation problems and rework resolutions. Given the potentially disastrous consequences of a gas leak caused by an incorrectly installed gas pipe, it was decided that licensing would be a good way to insure a minimum competency standard among installers.

The following are some highlights of the proposal. Keep in mind that as of this writing, it is not known whether the new ordinance will pass or not; or if does pass, it is not known what changes may be brought to the draft.

Although all licensing functions will be done by DCLU at the current location, field enforcement will be the responsibility of the plumbers.

- The ordinance will cover installation, alteration, extension, and repairs of gas piping.
- 2,000 hours of documented experience or completion of an approved gas piping mechanic class and 1,000 hours of documented experience will be necessary to

(Continued on page 3)

(Continued from page 2) qualify for the license.

- Fees of \$ 20, for the exam, and, \$40 for the license are being considered.
- There will be a written exam only with about 20 questions. Licenses will expire on May 31 of each year.
- An advisory board will be formed. The board will advise the Health Department on matters concerning revocation of licenses, and their appeals, written examinations, Code interpretations, and reinstatement of licenses and reciprocity with other jurisdictions requiring licensed gas piping mechanics.

ASME HOLDING THEIR NEXT **VESSEL PRESSURE PIPING CONFERENCE IN SEATTLE**

BY GIOVANNI

Approximately 900 members of the American Society of Mechanical Engineers will convene in Seattle from all over the world for the next pressure vessel piping conference.

The conference will be held at the Westin hotel between July 23 and July 27, 2000. It is expected that Japan, France, Canada, and the US will have the largest contingents.

The technical conference's theme will be 100 years of progress in technology. I understand that technical papers are welcome, and so are sponsors for the various events. Feel free to send me an e-mail if you want to know more and I will put you in touch with the organizers.

It is interesting to notice (e.g., this would make a good topic for a speech) that the City of Seattle has had a boiler law since 1907, and a photocopy of the first law is proudly on display above my desk, signed on the 5th day of August 1907 by Mr. Revelle, President of the Ah, well, back to the ASME conference. I will see Council and Mr. Burnett, Mayor. I say proudly because you there. those familiar with the history of the ASME know that the first ASME Boiler Code dates from 1919, and it is

said that it was inspired by similar laws enacted in Massachusetts (1908), and Ohio (1911). But little Seattle had one before that. Unfortunately, or fortunately (I tend to use the latter when I am caught in traffic on Highway 5, and nothing moves), Seattle has remained little and has not reached the one million souls necessary to be considered a jurisdiction by the ASME and the National Board.

Granted the code was an itty bitty thing in those simple days, but it had a couple of provisions which I find of great actuality. I will quote one of them concerning what they called the maximum safe pressure, which shall not exceed:

1) Such steam pressure as will subject any of the materials or parts of such boiler to a stress equal to one-fifth (1/5) of the calculated breaking or failing strength of such a material or part

Later on, they come out and call it factor of safety used in determining safe pressure, one of the items the Inspector had to keep in his well bound book in his office. Now I hear that factor of safety is falling out of favor and more exotic terminology such as "design margin" is being proposed.

THE FIRST ISSUE OF THE SEATTLE STEAMER IS REPRINTED BELOW AND ON THE NEXT FOUR PAGES WHICH RETAINED THE ORIGINAL PAGE NUMBERS



News from the Boller Section, Seattle Department of Construction and Land Use

Volume 1, Number 1

January 1990

Welcome Aboard!

In the spirit of welcoming in the new decade, it's "out with the old and in with the new". The BOILER NEWSLETTER has been replaced by the SEATTLE STEAMER.

For those of you that have received the old newsletter in the past, you'll recognize a few of the features in the Steamer. In the new format, we have included many new sections, some of which will be repeated in each issue for your convenience (frequently used telephone numbers, references, etc).

As before, the intent of the Steamer is to provide information to those who are interested in the installation, operation, care, repair and maintenance of boilers, pressure vessels and related issues.

We hope you enjoy the new publication. If you have comments or suggestions, please direct them to:

> City of Seattle - DCLU Boiler Section Rm 408 Muni Bdg 600 - 4th Avenue Seattle, WA 98104

Insurance Inspectors Notes

Addresses; sometimes "marginal"...

Since we've reached the computer age in our office, information, and the accuracy with which it is exchanged, has become very important. One of the problem areas is often the lack of an accurate address. One of the most common mistakes we see is the referral to EAST MARGINAL WAY S as E. Marginal Way S.

Please note that the word "EAST" is, in fact, part of the street name and is not a directional prefix. As such, East Marginal Way S. will be found on our sorted computer print-outs in the "E" section, not the "M" section. (the above also applies to WEST MARGINAL WAY SW.

Whom do you insure?

First, thank you for the slight improvement regarding the names and addresses of those insured accounts recently reported as new coverage or deleted coverage. Second, more improvement is needed. We still receive addresses such as "Fifth and Pine Streets" or "All Locations". There is little we can do with this type of address. In addition, parent company names given for insureds that use a different name are equally without worth. If we are provided with a correct address, we can often determine whom it is you insure by cross reference. In many of these cases, we will return your "notice of coverage or cancellation", with our "guess" included, for your verification.

Please make every effort to provide accurate coverage notices.

Convents and Rectories

Convents and rectories that accommodate 10 or fewer persons are exempt from routine re-inspection. Please note that if a convent or rectory is also used as a business office or any other non-residential activity, the exemption does not apply.

Economizers

Economizers that are not an integral part of a boiler (physically a separate component) are considered to be an individual vessel. Since these vessels are required to be installed under permit, feel free to leave the "integral or not integral" question to one of our staff.

Contractors Notes

National Board Registration

All boilers and pressure vessels that are required to be of ASME construction are also required to be registered with the National Board of Boiler and Pressure Vessel Inspectors. Contractors should always specify this requirement when ordering boilers and pressure vessels to be installed in Seattle. National Board registration is indicated on manufacturers data reports furnished by the manufacturer and will also be included with the required stamping on the boiler or vessel.

Note: This requirement does not apply to cast iron boilers.

Installation Permits

It is unlawful to operate a boiler or pressure vessel prior to final approval of the installation permit. Installers are allowed to operate the boiler or vessel as needed for testing and adjustment. When testing and adjustment are complete, the boiler or vessel is not to be left in operation until an inspection has been made and final approval is given.

Installers must call for inspection when an installation has been completed. For best results, call the inspector assigned to the area of the installation directly. If you do not know who the assigned inspector is, simply call any inspector and you will be transferred to the inspector for the area involved.

1990 Fee Schedule

There will be no fee increases for boiler and pressure vessel related fees in 1990. Installers can help minimize future fee increases by making every effort to comply with the requirements of the Seattle Mechanical Code prior to calling for inspection. Second and third inspections of an installation are very costly. For residential inspections, making arrangements for inspection with the owner as well as including an accurate home or work telephone number for the owner will reduce inspection time and cost.

Automatic Certification

Automatic certification is available for any boiler installation but is generally used for boilers requiring a licensed operator. When applied for licensing considerations, automation usually reduces the attendance requirements for a particular boiler (refer to the Steam Engineer & Boiler Fireman License Law for specifics).

We have made a change in policy regarding automatic boilers that undergo a burner replacement. In the past, a burner replacement resulted in the deletion of "Automatic" certification. We will now honor any existing automatic certification. As such, when a burner is replaced on a boiler that has already been certified as "Automatic", only the standard burner installation fees will be charged. Refer to the current fee schedule for a listing of these fees.

General Interest

Steam License Law

The Steam Engineer and Boiler Fireman License Law requires that many boilers installed in Seattle be attended by licensed personnel. Any technical questions about the license law should be directed to Paul Bjornsson (386-1296) of the Department of Licenses and Consumer Affairs. Paul's name and number will appear in each edition in the "Important Telephone Numbers" section. If you want Information about obtaining a license, call Ms. Jerry Ruddy at 684-8484 and she will send an information package to you that includes a copy of the current license law, an information sheet that discusses the various license grade levels, lists recognized boiler schools, suggests reading materials, etc and a copy of an examination application form. This service is provided free of charge.

Currently, written exams are scheduled on Tuesdays and Wednesdays. Oral exams are given on Fridays. Both oral and written exams are given by appointment only. For an appointment, call Jerry Ruddy.

Dept of Construction & Land Use		Dept of Licenses & Consumer Affairs	
Boller Inspectors	684-8113 FAX	Boller Operations Inspector	
Carl Edelman George Folta	684-8460 684-5366	Paul Bjornsson 386-1298	
Vacant James McClinton	684-8461 684-8462	Steam License Examinations/Info	
Chief Boiler Inspector		Ms. Jerry Ruddy 684–8484	
Don Gentry	684-8459	City of Seattle Water Department	
Support Staff / Billing /	Info	Water Quality / Back Flow Prevention	
Gloria Martin	684-8418	Sarah Miller 684–7404	

Seattle Steamer is published by the City of Seattle, Department of Construction & Land Use on an "as needed" basis. The intent of the publication is to provide general information to interested persons in related fields. Readers are welcome to submit material for publication (subject to approval). Any materials submitted for publication will become the property of the Department. As this is our first issue, comments and suggestions are welcome.

(General Interest...continued from pg 2)

WSBIA – Washington State Boiler Inspectors Association

WSBIA holds a monthly meeting on the first working Monday of each month. Anyone who is involved in the "boller and pressure vessel business" or related business is welcome to attend.

This month, the meeting was held on the 9th as the 1st (New Years) was a holiday. The January meeting included a tour of the refurbished Tacoma Steam Plant conducted by Richard L. Boney, Assistant Thermal Plant Supervisor.

If you, or someone you do business with, would like to give a presentation at one of the monthly meetings, simply telephone one of the WSBIA officers (listed elsewhere in this publication along with meeting info) to make arrangements.

Burner Fuel Switches

Section 2106(c) of the 1985 Seattle Mechanical Code (SMC) requires that all newly installed burners that are capable of burning two or more fuels be equipped with a "positive center off" type switch. Such a switch will not allow an operator to transfer from one fuel to another without a mechanical delay (incorporated in the switch). The term "newly installed" applies to any burner installed on, or after, November 19, 1987.

Installation Manuals

Section 504 of the 1985 SMC requires installers to provide an installation and operating instructions manual for all boilers installed. If you generally keep these manuals for any future service needs, please order an additional copy when boilers are ordered so that a manual is left at the job site.

Vacancy

Boiler inspector Dave Maynard has left us to take a professional engineering position with the City of Tacoma. Dave has been a Seattle inspector for over four years and has done an outstanding job. Dave will be missed personally and professionally.

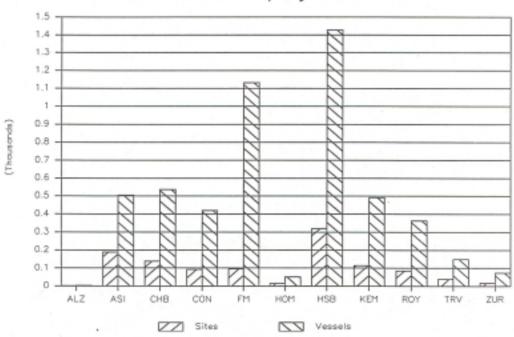
Daves departure will create and opening for a National Board commissioned inspector. Call Myrtre Carter in our personnel office at 684-8612 for details.

Washington State Boiler Inspectors Association PO Box 14321 Seattle, WA 98114-0321

Current Officers - 1989 / 1990	Phone	Representing
Chairman, Clarence Campbell	684-8460	Continental Ins Co
Vice Chairman, Ken Eshelman Sect/Treasurer, Don Willis	284-6750 591-5029	Hartford Steam Bir City of Tacoma

Monthly Meetings are held on the first working Monday of each month in the Kings Table Restaurant meeting room, 2222 California Ave SW, which is approximately two blocks north of Admiral Way SW. From I-5, go across the West Seattle bridge (high rise) and take the Admiral Way exit. Turn right on California Ave SW and the restaurant is about two blocks ahead, on the right. Generally, people meet for lunch at noon and the meeting is called to order at 12:30 pm.

Insurance Company Statistics



The above graph shows the current comparison of insured sites and vessels between insurance companies.

ALERT

(Reprinted, with permission, from the National Board publication "Chiefs Connection", NOV/DEC edition)

*ALERT - Installation of Safety Relief Valves and Safety Valves on Lochinvar Hot Water and Steam Bollers, Models NO. CN-70, CB-110, CB-215, CB-255 and CB-355.

The National Board of Boiler and Pressure Vessel Inspectors was recently advised that the installation of pressure relief and safety valves installed on Lochinvar Hot Water and Steam Boilers was not in compliance with ASME Boiler and Pressure Vessel Code, Section IV, Heating Boiler Requirements.

A meeting was arranged with the manufacturer and the Authorized Inspection Agency. It was determined that the Installation and Operation Manual supplied with these units instructed the owner/user or installer to install these valves in conflict with Article 7, Paragraph HG-701.1 of Section IV.

The necessary corrective action has been taken by the manufacturer by revising the Installation and Service Manual. In addition, a letter from the manufacturer has been sent to all suppliers of these units advising them that the previous instructions were in error and the installation should be corrected to meet the new instruction and Code requirements immediately.

The purpose of this alert is to advise that there may be previous installation which have not been corrected. All inspectors should be alerted to check these items to assure compliance with Article 7, Paragraph HG-701.1"

(Article 7, paragraph HG-701.1 is entitled "Permissible Mounting" and covers the physical location of safety and safety relief valves. We do not know which portion(s) of HG-701.1 were not followed and we know of no installations of Lochinvar boilers in Seattle - Ed.)

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Mailing List for the first Issue of Seattle Steamer



Published periodically by the Seattle Department of Construction and Land Use. Room 408, Municipal Building, 600 4th Avenue, Seattle, Washington 98104

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Don Gentry

Subscription Information: 684-8418

A.O. Smith Corporation Alaska, State of Alki Plumbing All Temp Mechanical Allied Services American Dry Ice Anderson Magruder ARNOO Plumbing & Heating B & B Heating Best Plumbing & Heating Paul Bjomsson Blue Flame Service Richard Boney, City of Tacoma. Bosler Energy Systems W.A. Botting Plumbing/Heating Co. British Columbia, Province of Broadmoor Plumbing & Heating Co. Canal Boiler Works Careco Cascade Boiler CH Murphy / Clark-Ullman WG Clark Construction Co. Cole Industrial, Inc. Combustion & Control, Inc. Commercial Welding Creekmore, Inc. Cryogenios Northwest DC & L Distributing Co., Inc. Fraser Boiler Works, Inc. Jay Frees Gas Appliance Service, Inc. Gene Johnson Plumbing, Inc. S.M. Gilbert Company Glastra Heating, Inc. Mr. Peter Glastra H.W. Hill Company, Inc. Industrial Boiler Service Insurance Companies (AIA's) Karls Marine Lang's Mechanical Lenihan Distributing Co. M & H Mechanical Systems, Inc. MacDonald-Miller Co.

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The mailing list for the first edition of SEATTLE STEAMER is shown above. If you know of someone, a company or organization that would benefit by being on the mailing list, please call Gloria Martin at 684-8418 or Don Gentry at 684-8459.

A. Willoox Company

(Continued from page 2)

now, e-commerce is the hottest thing in the economy of the world. When I was a kid, they used to teach us that the number of brain cells you are born with was just about it. Now we laugh at some of these notions, but even in 1995 the regeneration of brain cells was thought impossible, and the sheep Dolly had not yet become a household name.

The amazing thing, whose impact has not yet entered our daily expectations, is the exponential growth of science and knowledge. What is going to be the status of knowledge say in 2100? I do not know, but it is safe to predict that in 2100 we will have answers to questions we have not yet asked ourselves. Ah well....

HAPPY BIRTHDAY STEAMER! HAPPY HOLIDAYS AND HAPPY 2000 TO ALL OF YOU

GIOVANNI

SIX MONTHS INTO THE NEW STEAM LICENSE WRITTEN EXAM. BY GIOVANNI

We have been implementing the new written steam operator exam for a little over six months, and finally things are beginning to fall into a pattern. But it would be very difficult for me to look you in the face and tell you that the new exam was without its share of growing pains, as is true for all changes.

First, why did we change from the old essay, draw your boiler routine? Several factors came into play, but a list of some of them would include: a more objective and easier way of grading exams, electronic handling and storage of exams, rejuvenating the questions (we had seen candidates with copies of the exam), and through randomization, making sure that the odds of two candidates having the same exam were negligible.

We also wanted to tailor the exam to respond to specific safety needs. Basically we wanted all operators to be able as a minimum to explain:

- The function of all the controls of a typical boiler
- What happens if the boiler is allowed to operate below the lowest permissible level
- All the possible ways of feeding water to a boiler
- The consequences of operating with the level

too high

- How to blow down a boiler safely
- How to start and to shut off a boiler safely
- How to put boilers in battery on the line
- The operator's obligations under the ordinance

How does the test work? Each candidate is provided with several sketches of boilers with numbered components and has to answer about 50 multiple choice random questions. There are also questions that do not have a corresponding component number. Those are either ordinance or physic questions. The intent of the exam is not to trick anybody, but, as with all exams, it helps if you read the questions and proposed answers carefully.

The most common objection I get are that the symbols on the sketches are not conventional, and I am looking into it. I thought that by using the symbols from the ASME Section I (Power Boilers) for valves and from the ASME CSD1 (Controls and Safety Devices for Automatically Fired Boilers) for the fuel train I would be home free since both codes have been adopted by the City of Seattle and State of Washington, but apparently it was not so.

Of course, candidates do not like failing exams, and that is the other complaint.

So far, the average grade is 60 percent, and that is the passing grade, but I hope to bring it gradually to 70 percent. I have heard horror stories that everybody is flunking the exam. In reality, the failure rate is 35 percent, just a little above the high school dropout rate in some of the cities around here.

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Some of the most commonly failed questions? Termination and drainage of safety valve discharge pipes; recommended ways of testing safety valves and low water cut-off devices, sequencing of blow-down procedures; products of complete natural gas combus-

tion; how to replace, clean, test, put into service water glasses, increase in stack temperature as a diagnostic tool, testing of high and low gas pressure switches, ordering the steps necessary to put a boiler on the line in parallel with another boiler,...etc....etc.

AS REPORTED FROM THE FIELD The clock as a safety device

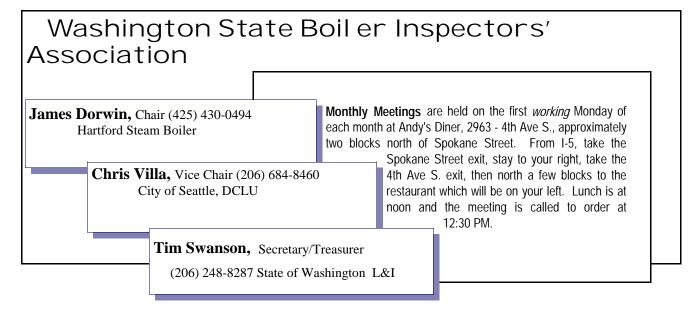
BY JAMES MCCLINTON AND CHRIS VILLA

An apartment complex on Capitol Hill has a large hot water WT boiler of old construction. I doubt there are any other boilers like it in the city. Not too long ago, the boiler had some tubes replaced, and recently it needed some additional work because the tubes were leaking at the tubesheet. It was discovered that the tubes did not roll well because the tubesheet had thinned out in some spots, and some welding had to be done to remedy the problem. As often happens with old boilers, when you touch something, something else begins to leak, and pretty soon you are chasing a bunch of problems. Well some of the refractory collapsed, and that had to be repaired as well.

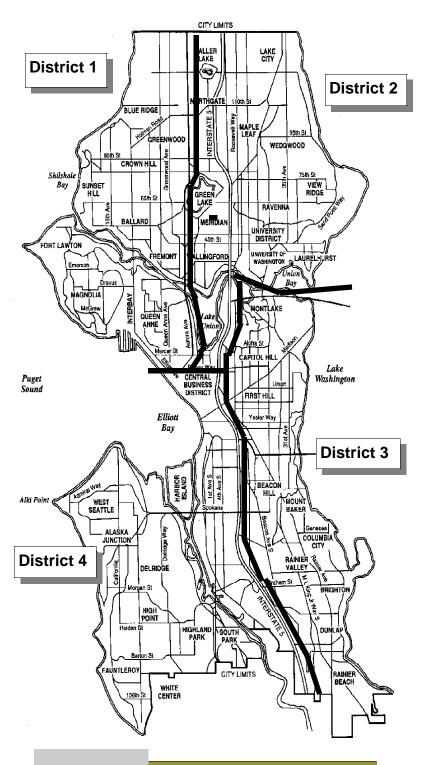
Eventually, some \$30,000 later, the boiler was fired, and we thought we had seen the end of it. A few hours later, we got a frantic call from the manager, that the boiler room was full of steam. At that time, we told the manager not to fire the boiler until the next day when we could make an investigation.

The day after, the inspector found that none of the controls worked. Since they had experienced some trouble in firing the boiler, the manager had called an electrician who got the boiler to fire by eliminating high temperature switches, low water cut-off, and all the other safeties. Luckily the clock was still functioning and that is what saved the boiler. There are several lessons to be learned here, but the most important are: test all the controls after a major repair, and only qualified personnel should be working on boilers!

The *Steamer* is generally published quarterly by the City of Seattle, Department of Design, Construction & Land Use, Boiler Pressure Systems Inspection Section. The intent of the publication is to provide information to interested persons in related fields. Readers are welcome to submit material for publication (subject to approval). Any materials submitted for publication will become the property of the Department unless prior arrangements are made. Readers are welcome to reprint any <u>original</u> material (the copyrights of others must be respected); we ask only that you credit the *Steamer* as the source.



Inspection Districts in Seattle



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Telephone Number Reference

Seattle Dept. of Design, Construction & Land Use

Boiler Inspectors

Chris Villa 206-684-8460 Vic Hall 206-684-5366 James McClinton 206-684-8462 206-684-8461 Larry Leet (NEW) 206-233-7902

Chief Boiler Inspector/

Licensing Supv

Giovanni Ranieri 206-684-8459 email: giovanni.ranieri@ci. seattle.wa.us

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Billing Info

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email: gloria.martin@ci.

seattle.wa.us

Steam/Refrigeration License

Info/Exams

Evelyn Dunlop 206-684-5174

email: evelyn.dunlop@ci.

seattle.wa.us

Seattle Public Utilities Department

Back Flow Prevention Questions/ Insp.

206-Karen Lanning 684-7408

Bob Eastwood 206-

233-2635

206-684-7585 FAX

Plumbing Inspection In Seattle

Dick Andersen, Chief 233-7914

Ginger Ohrmundt, Permits206-684-5198

Inspection Requests 206-233-2621

State of Washington Boiler Inspection

Olympia - Main Office

Dick Barkdoll, Chief 360-902-5270

email: boiler@localaccess.com

Administrative/Inspection

Pat Carlson-Brown 360-902-5271 FAX 360-902-5292

Bellingham

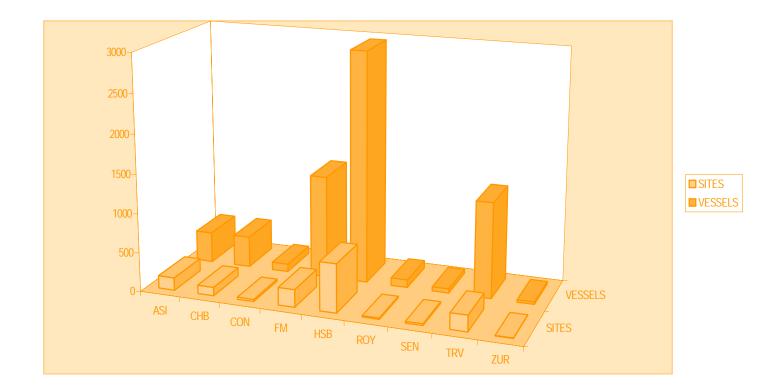
Linda Williamson 360-647-7317

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Everett

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